

ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT

**MARYS PEAK RESOURCE AREA
INTEGRATED NON-NATIVE PLANT MANAGEMENT PLAN**

Environmental Assessment Number OR-080-03-10

June 2003

United States Department of Interior
Bureau of Land Management
Oregon State Office
Salem District
Marys Peak Resource Area
Benton, Polk, Lane and Lincoln Counties, Oregon

Responsible Agency: USDI - Bureau of Land Management

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Abstract: This environmental assessment discloses the predicted environmental effects of two alternatives for Bureau of Land Managed (BLM) lands located in the Marys Peak Resource Area (MPRA) of the Salem District BLM. The proposed action is implementation of a long term Integrated Weed Management (IWM) Plan to reduce and control non-native plant (NNP) species across the MPRA. It includes cultural, physical and biological control of non-native species in a variety of habitats and land use allocations (*see appendix D*). Treatment would occur in all land use allocations such as; areas of critical and environmental concern (ACEC), riparian reserves, late successional reserves (LSR), adaptive management areas (AMA) and general forest matrix (GFMA). Chemical treatments would not be analyzed in this EA.

FINDING OF NO SIGNIFICANT IMPACT

A. Introduction

This project is located throughout all land use allocations. The environmental assessment (EA) is attached to and incorporated by reference in this Finding of No Significant Impact (FONSI) determination.

Implementation of the project would conform to management actions and direction contained in the Salem District Record of Decision and Resource Management Plan (RMP). The RMP, dated May 1995, is tiered to and incorporates the analysis contained in the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement (RMP/FEIS)* (September 1994). The proposed action and associated alternatives also conform to direction described in the attached EA.

The EA and FONSI will be made available for public review from July 10, 2003 to August 11, 2003. The notice for public comment will be published in a legal notice by a local newspaper of general circulation (*Corvallis Gazette Times*); sent to those individuals, organizations, and agencies that have requested to be involved in the environmental planning and decision making processes. Comments received in the Marys Peak Resource Area Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before August 11, 2003 at 4:00 P.M., Pacific daylight-saving time, will be considered in making the final decisions for this project. Office hours are Monday through Friday, 7:30 A.M. to 4:00 P.M., closed on holidays. The fax number is 503-375-5622.

B. Finding of No Significant Impact

Based upon review of the EA and supporting documents, I have determined that the project is not a major federal action and will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area.

No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27 and do not exceed those effects described in the *RMP/FEIS*.

Therefore, an environmental impact statement is not needed. This finding is based on the following discussion:

Context. The proposed action is implementation of an Integrated Weed Management (IWM) Plan to reduce and control non-native plant (NNP) species across the Marys Peak Resource Area (MRA). It includes cultural, physical and biological control of non-native species in a variety of habitats and land use allocations (*see appendix D*). Treatment would occur in all land use allocations such as; areas of critical and environmental concern (ACEC), riparian reserves, late successional reserves (LSR), adaptive management areas (AMA) and general forest matrix (GFMA). Chemical treatments would not be analyzed in this EA.

The discussion of the significance criteria that follows applies to the intended action and is within the context of local importance. Chapter IV of the EA details the effects of the proposed action. None of the effects identified, including direct, indirect and cumulative effects, are considered to be significant and do not exceed those effects described in the RMP/FEIS.

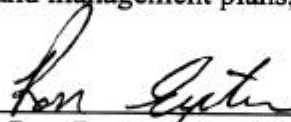
Intensity. The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27.

1. **Impacts may be both beneficial and adverse.** The beneficial effects of the proposed action are that NNP species are controlled so that habitats are restored to native plant communities. Adverse impacts may be impacts to non-target species, which have adapted to communities altered by the presence of non-native species. None of the environmental effects disclosed above and discussed in detail in Chapter IV of the EA and associated appendices are considered significant, nor do the effects exceed those described in the RMP/FEIS.
2. **The degree to which the selected alternative will affect public health or safety.** Removal of non-native vegetation by mechanical, physical and cultural means would have little negative affect on public health or safety. Removal of non native vegetation would help restore ecosystems and natural vegetation which would have positive impacts on public health.
3. **Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas.** ACECs, RNAs, wetlands, and along wild and scenic rivers would be high priority areas for elimination of non-native species.
4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** An initial scoping letter was published in the Benton County Gazette times (Feb. 17th) and released to several newspapers, radio stations and State and County parks and centers around the Newport area soliciting input into the IWM proposal. No comments were received. A complete disclosure of the predicted effects of the proposed action is contained in Chapter IV of the EA and associated appendices.
5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** The proposed action is not unique or unusual. Many methods of control have been utilized for most of the NNP species that occur throughout the resource area. The environmental effects to the human environment are fully analyzed in the EA. There are no predicted effects on the human environment that are considered to be highly uncertain or involve unique or unknown risks.
6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** The project does not set a precedent for future actions that may have significant effects, nor does it represent a decision in principle about a future consideration.
7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.** The interdisciplinary team evaluated the possible

actions in context of past, present and reasonably foreseeable actions. Significant cumulative effects are not predicted. A complete disclosure of the effects of the selected alternative is contained in Chapter IV of the EA.

8. **The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.** The project will not adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor will it cause loss or destruction of significant scientific, cultural, or historical resources (EA, Appendix B).
9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.** Project as designed is considered a no effect to terrestrial wildlife. Pursuant to Section 7 of the Endangered Species Act, these projects are covered from the United States Fish and Wildlife Service under the current Programmatic Disturbance Only Biological Opinion. There will be no effect to the suitable habitat of any listed species. The project would have no effect on listed fish species. The project is covered under the Endangered Species Act Section 7 Formal consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for U.S. Forest Service and Bureau of Land Management Programmatic Activities in Northwestern Oregon (February 25, 2003).
10. **Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.** The project does not violate any known Federal, State, or local law or requirement imposed for the protection of the environment. State, local, and tribal interests were given the opportunity to participate in the environmental analysis process. Furthermore, the project is consistent with applicable land management plans, policies, and programs.

Prepared By:



Ron Exeter, Marys Peak Resource Botanist


Date

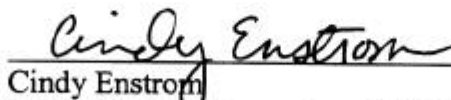
Reviewed By:



Carolyn Sands, NEPA Coordinator


Date

Approved By:

Cindy Enstrom
Marys Peak Resource Area Field Manager
Date

ENVIRONMENTAL ASSESSMENT

I. PURPOSE AND NEED

A. Introduction

For the purposes of this EA all references to weeds refers to any non-native plants (NNP) and any reference to chemical refers to herbicides. Integrated weed management (IWM) refers to control of non-native plant species by cultural, physical (including prescribed fire) and biological methods. *See Appendix D for a list of treatments that fall into these categories.*

The Marys Peak Resource Area (MRA) of the Salem District, Bureau of Land Management (BLM) proposes to implement an integrated weed management program. The project area includes the entire Marys Peak Resource Area (MRA) lands, approximately 128 thousand acres, which are located west of Salem in Benton, Polk, Lane and Lincoln Counties. The project area incorporates several watersheds. *See Appendix F for a map of the MRA.*

The increase in non-native plants and the impacts they are having on local lands and resources are creating concerns for land managers. New invasions of NNPs and the spread of established infestations are threatening the productivity of public land. Management of NNPs are important for maintaining healthy ecosystems.

B. Conformance With Land Use Plans, Policies, and Programs

This EA is tiered to the Northwest Area Noxious Weed Control Program Environmental Impact Statement (EIS) as Supplemented (March 1987) and the Vegetation Treatment on BLM Lands in Thirteen Western States EIS (1991).

This EA is in compliance with management direction established in the *Salem District Record of Decision (ROD) and Resource Management Plan (RMP)*, (ROD,- May, 1995).

Watershed Analysis and LSR Assessment: All of the Marys Peak Resource Area's watershed analyses have addressed exotic and introduced species of concern and the need for the control and/or eradication.

EA Consultation: Project as designed is considered a no effect to terrestrial wildlife. Pursuant to Section 7 of the Endangered Species Act, these projects are covered from the United States Fish and Wildlife Service under the current Programmatic Disturbance Only Biological Opinion. There will be no effect to the suitable habitat of any listed species. The project would have no effect on listed fish species. The project is covered under the Endangered Species Act Section 7 Formal consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for U.S. Forest Service and Bureau of Land Management Programmatic Activities in Northwestern Oregon (February 25, 2003).

In addition, this proposed action is subject to the following land use laws and/or acts:

- ❑ Federal Policy and Management Act (FLPMA), October 1976, Public Rangelands Improvement Act (PRIA), October 1978, Carlson-Foley Act of 1968, Federal Noxious Weed Act of 1974.

Documents providing additional direction include:

- ❑ *(FEMAT) Forest Ecosystem Management: An Ecological, Economic, and Social Assessment: Report of the Forest Ecosystem Management Assessment Team, July 1993.*
- ❑ *(RMP/FEIS) Salem District Proposed Resource Management Plan/Final Environmental Impact Statement, September 1994.*
- ❑ *(SEIS/ROD) Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, April 1994. The RMP was designed to be consistent with the SEIS/ROD and incorporated the analysis in the SEIS (RMP p.3).*
- ❑ *(SEIS) Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, February 1994.*
- ❑ *(SM/FEIS) Final Supplemental Environmental Impact Statement for Survey and Manage, Protection Buffers, and Other Mitigation Measures in the Northwest Forest Plan, November 2000.*
- ❑ *(SM/ROD) Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and Other Mitigation Measures Standards and Guidelines, January, 2001.*
- ❑ *(IM OR-2002-064 and OR-2003-050) 2001 and 2002 Survey and Manage Annual Species Review.*

C. Purpose and Need for Action

The purpose of this management proposal is to implement an IWM program that would maintain healthy functioning ecosystems by restoring native plant communities through reduction, control, and eradication of NNP species. The program would include education about the risks and economic impacts of NNP.

An integrated NNP management plan is needed for several reasons:

- Federal law requires that the BLM manage NNPs.
- Additional control measures and emphasis are needed to limit the presence and impacts of certain NNPs on the MRA. Serious ecological impacts occur in a number of sites and large established sites are expanding.

- The trend over the past years has been an increase in the number of visitors passing through or visiting public lands. This has contributed to an increased rate of spread of NNP species. This trend is expected to continue.
- The existing Noxious Weed Control Program EA, (March 1992-1997) is no longer valid.
- Counties, private landowners, watershed councils, and other agencies are concerned about the increase and impacts of NNPs on native species and economics.
- The current known infestations of NNPs are manageable.

D. Project Objectives

The Salem District RMP (page 64) directs that NNP infestations should be contained and/or reduced on BLM- administered lands using an IWM approach that is in accordance with BLM Northwest Area Noxious Weed Control Program EIS and the related Record of Decision (1985). The second objective would be avoiding the introduction or spread of NNP infestations. For all land allocations, control methods would be used which do not retard or prevent attainment of Aquatic Conservation Strategy Objectives.

The proposed action would implement the seven goals identified in Partners Against Weeds (an Action Plan for the BLM), January 1996.

Goal 1: Prevention and Detection

Goal 2: Education and Awareness

Goal 3: Inventory

Goal 4: Planning

Goal 5: Integrated Weed Management

Goal 6: Coordination with adjacent landowners

Goal 7: Monitoring.

II. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This section describes alternatives identified by the interdisciplinary (ID) team that helped develop this IWM plan. Non native plant treatments incorporated in the proposed action conform with standard practices and design features intended to reduce the environmental effects of the reduction on NNP species within the Marys Peak Resource Area.

A. Scoping Issues

A scoping letter was published in the Corvallis Gazette Times and a news release sent to several local radio stations, newspapers and county parks. No comments were received. No issues concerning the proposed action were identified through public scoping or by an ID team of BLM resource specialists that would lead to an additional action alternative.

The following environmental elements will be analyzed in this ea; soils, hydrology, vegetation, wildlife, fisheries, recreation and fuels.

B. SUMMARY OF ALTERNATIVES

Alternative A: Proposed Action

The proposed action is implementation of a long term Integrated Weed Management (IWM) Plan to reduce and control NNP species across the Marys Peak Resource Area (MRA). It includes cultural, physical and biological control of non-native species in a variety of habitats and land use allocations (*see appendix D*). Treatment would occur in all land use allocations such as; areas of critical and environmental concern (ACEC), riparian reserves, late successional reserves (LSR), adaptive management areas (AMA) and general forest matrix (GFMA). The vast majority of treatments would consist of physical control such as pulling, mowing, slashing, lopping or chopping NNP species.

Generally the proposed action would involve control of NNP species through the use of physical treatments such as; pulling, mowing, slashing, lopping, chopping or burning. After treating areas infested with NNPs the areas may be planting or seeding with native plant species. Cultural and biological controls may be used where the control of physical treatments is not sufficient or economical.

Chemical control would not be analyzed in this EA.

1. Target Species

All NNP species occurring within the Marys Peak Resource Area would be targeted.

2. Integrated Weed Management

The proposed action would utilize three primary methods for NNP control: Cultural, Physical and Biological methods. *See Appendix D for a list of treatments that fall into these categories.*

- ◆ Cultural Treatments: These treatments include prevention, wildlife management, and competitive plantings with native seeds/plants.
- ◆ Physical Treatments: Physical treatments include manual, mechanical, and burning treatments.
- ◆ Biological Treatments: These treatments include using natural competitors including insects and pathogens.

a) Control Method Determination

Selection of the appropriate method would be based on such factors as the growth characteristics of the target NNP, size of the infestation, location of the infestation, accessibility of equipment, potential impacts to non-target species, use of the area by humans, effectiveness of the treatment on target species, and cost. Depending on a plant's characteristics, these methods may be used individually or in combination and may be utilized over successive years.

Due to seed banking, annual germination of seeds from previous years, and differing propagation characteristics of NNPs, treatments could occur annually in the same local for several years. Site-specific reviews would be conducted prior to initiating IWM activities.

b) Use of Physical Treatments

This is the preferred method of treatment. It would be utilized by itself or in combination of biological and cultural treatments.

c) *Use of Biological Controls*

Biological controls would be utilized when available and in accordance with the Oregon Department of Agriculture (ODA).

d) *Priorities for Treatment*

Inventories would be conducted within the MRA to identify new NNP infestations and to monitor the spread of known infestations. Inventorying would identify locations of NNP sites needing treatment. Priority of these sites would be evaluated by the following:

- Priority 1: Eradication of new NNP species within the MRA and those NNP listed species designated as "noxious weeds" by the Oregon State Agriculture Department and in special areas such as; ACECs, wild and scenic rivers, wetlands or areas designated as scenic by-ways. *See appendix E for a list of current Oregon State Listed Noxious Weed Species.*
- Priority 2: Eradication of small infestations of NNPs that are known to occur within the MRA and have a high potential for spread.
- Priority 3: Eradication of small infestations of NNP that are known to occur within the MRA but are widespread throughout the resource area.
- Priority 4: Eradication of large widespread known NNP populations. The goal for widespread and well established NNP species is containment and reduction of infestations.

e) *Area of Treatment*

The number of acres treated annually would be based on available funding, weather, and condition of the NNP sites.

g) *Special Management Areas*

Areas of Critical Environmental Concern (ACECs): Treatment strategies would be in accordance with direction established in the RMP and specific ACEC management plans.

h) *Monitoring*

Treated sites would generally receive short and long-term monitoring to determine effectiveness of meeting treatment objectives, impacts on non-target species, and to determine the need for follow-up treatments.

PROJECT DESIGN FEATURES

1. Minimize any soil or habitat disturbances.
2. Following successful NNP control, sowing or planting native vegetation would occur on the project site.
3. All sites proposed for treatment would be evaluated for plant, fungal and animal special status or special attention species. If any such species are found, site-specific mitigation measures would be identified and implemented.

4. If Federally listed species occur within or near the treatment site, mitigation would be developed to minimize effects on the species. If affects to Federally listed species are in excess of those described in the applicable BOs issued by the USFWS and NOAA Fisheries, then ESA section 7 Consultation would be reinitiated.
5. Activities in any sensitive areas for wildlife will be seasonally restricted.
6. No broadcast burning of non-native plants would be permitted within 100 feet of any surface water. A 50 foot minimum buffer would be required for individual burning of scattered piles of non native vegetation. Burning within riparian reserves would be allowed only if no impacts to listed fish species would occur, as determined by the resource area fish biologist.
7. Minimize soil disturbance within 20 feet of perennial streams, to prevent adverse affects to stream channel or water quality conditions (this design feature is only for large scale treatments, not scattered individual plant).
8. During project design, develop appropriate measures to ensure protection of aquatic and riparian habitats.
9. Refuel power equipment, or use absorbent pads for immobile equipment, at least 150 feet distant from water bodies, to prevent direct delivery of contaminants into a water body, or as far as possible from the water body where local site conditions do not allow a 150-foot setback.
10. All future proposed projects would be reviewed by MRA resource area specialist to determine if any additional environmental risks occur outside of the scope of this EA. If risks are considered to be other than "No Effect" the project would be reviewed by the FWS and NOAA.
11. Any additional mitigation measures or best management practices can be found in the EIS, Vegetation Treatment on BLM Lands in Thirteen Western States (1991).
12. To reduce smoke conflicts in recreation sites, consider chipping, flail mowing or other mechanical means to reduce NNP's in lieu of burning.
13. Hand cutting, piling and burning of piled material may be used in areas not reachable with mechanical equipment. Piled material planned for burning should be allowed to dry thoroughly prior to ignition to promote rapid, clean burning with minimal smoke impacts.
14. Ground disturbing work will be suspended if cultural material is discovered during project work until an archaeologist can assess the significance of the discovery. Survey techniques would be based on those described in Appendix D of the *Protocol for Managing Cultural Resource on Lands Administered by the Bureau of Land Management in Oregon*. Post-project survey will be conducted according to standards based on slope defined in the Protocol appendix.

B. Alternative B: No Action Alternative

Under this alternative, no control measures of NNP species would be implemented. However, Federal law requires that NNP species be controlled on Federal land: Federal Noxious Weed Act of 1974 as amended and the Carlson-Foley-Act of 1968.

C. Alternatives considered but Dropped.

1. Allow for herbicide use throughout the Marys Peak Resource Area: An alternative was considered to allow herbicide use throughout the MPRA for the control of non-native vegetation. Herbicide use would be widespread under this alternative. However, the ID team felt that this alternative was too broad and the entire resource area could not be analyzed for an EA with such broad scope.

III. AFFECTED ENVIRONMENT

This chapter describes the present condition (i.e., affected environment) within the project area for the following resource categories: soils, hydrology, vegetation, wildlife, fisheries, recreation and fuels. Additional resources or values for which review is required by statute, regulation, Executive Order, or policy, are described in Appendix B: Elements of the Environment.

A. Soils

Non-native plants occur on all the different soil types and depths throughout the Marys Peak Resource Area. Soils range from sand and sandy loams to silty loams, clay loams and clays as well as rock outcroppings interspersed with pockets of shallow soil. Soils that have been disturbed or removed (rock pits, heavily used recreation areas, harvested areas, roadsides, turnouts and rock stockpile areas) have the greatest populations of non-native species. Many non-native plants can thrive on very poor, shallow soils and out-compete native vegetation. On deep soils, Blackberry and English ivy can crowd out native species which have greater soil stabilizing capacity.

B. Hydrology

The Marys Peak Resource Area lies within thirty-six 5th-field Watersheds. Fifteen 5th & 6th field watersheds have been identified by the ROD as Key Watersheds that serve as refugia crucial for salmonid and resident fish species. Seventeen of the 5th-field watersheds have been analyzed by district Watershed Analyses, with the remainders being incorporated into analysis completed by other agencies.

In general, water quality of streams within the Marys Peak RA is considered good and most streams are currently in proper functioning condition. Small, intermittent, headwater tributaries dominate the hydrology of the resource area and streams are generally cold and clear. Sedimentation and turbidity are a concern in some areas, as is a lack of large woody debris in stream channels. A few streams are 303d listed as water quality limited by the Oregon Department of Environmental Quality (DEQ), primarily for elevated summer temperatures. Some of the larger streams are also identified by the DEQ's 319 report for nonpoint source pollution concerns.

In addition to streams there are wetlands, ponds, marshes and some lakes on MRA lands. The resource area receives on average approximately 92" of precipitation annually.

According to the RMP the beneficial uses within Marys Peak Resource Area are resident and anadromous fish, municipal water, domestic, irrigation use, and water contact recreation. The predominant non-consumptive use of the water on BLM lands is propagation of salmonids and other fish and aquatic life. There are several municipal watersheds within the MRA.

The Yaquina Head Outstanding Natural Area lies within the Devils Lake / Depoe Bay / Newport 5th-field watershed. The area includes a distinct promontory bounded by Pacific Ocean on its north, west, and south sides. The local climate is highly influenced by the ocean, with temperatures extremes being modified throughout the year. Annual precipitation ranges from 40 to 60 inches with all but a fraction of this amount coming in the form of rain. Nearly all the precipitation falling on Yaquina Head runs off directly into the Pacific Ocean due to the impermeability of the basalt rock underlying the soil.

The Yaquina naturalist area includes an intertidal zone, but does not include any freshwater habitat. Closest communities include Newport (approx. 3 miles to the south), Agate Beach, & Beverly Beach.

C. Vegetation

1. Forest vegetation

Marys Peak Resource Area lands are checker boarded or intermixed with private and state or other federal lands. Much of these lands have been logged within the last century. Existing Roads and older skid roads traverse much of the forested landscape. It is estimated that there are approximately 4 miles of existing roads per square mile of land.

The majority of Marys Peak Resource Area ($\pm 128,000$ acres) area lies within a northern coniferous forest zone. The dominant plant association is the western hemlock association with lesser amounts of silver fir, Douglas-fir, grand fir and Sitka spruce associations. However, Douglas-fir is the most common and dominant conifer tree species with the resource area followed by western hemlock, western red cedar, noble fir, Sitka spruce, grand fir and lodgepole pine. Hardwoods such as red alder and big leaf maples are common along the riparian and aquatic systems. Approximately 64% (82,000 acres) of the resource area is comprised of riparian reserves. Approximately 1% of the resource area is considered non-forested or is dominated by grasses, shrubs, rocky outcrops.

Shrubs and forbs within this northern coniferous forest area are mostly comprised of salal, sword-fern, Oregon grape, vine maple, California hazelnut, oceanspray, salmonberry, thimbleberry, red and evergreen huckleberry.

Non-native vegetation is established within the MRA and has replaced native vegetation, especially in young plantations (< 30 years old) and adjacent road systems, stock piles, rock pits and other areas where the soil has been disturbed. Much of the non-native vegetation is replaced in time with native vegetation as the conifer canopy develops and the non-native species are shaded out. However, if a canopy closure of approximately 75% or greater never develops, the non-native vegetation can persist for years.

2. T&E, Special Status, and Special Attention Plant, Lichen, Fungus and Bryophyte Species

Marys Peak Resource Area has hundreds of sites of T&E, special status and special attention plant, lichen, fungi and bryophyte species. The majority of these sites are fungi followed by

lichen, bryophyte and plant known sites. The sites are scattered throughout the resource area and occur in natural existing vegetation or timbered stands.

3. Non-Native Plant Species.

Non-native weed species occur mainly along areas of man made disturbances such as roads and within timber harvest boundaries. Non-native plant species currently occupy less than 1% of the land base of the Marys Peak Resource Area (botanists estimation).

Common and widespread Oregon State listed noxious weeds that currently occur throughout the resource area include; Scot's broom, Himalayan blackberry, Canadian thistle, bull thistle, St. John's wort and Tansy ragwort. Other noxious weed species known to occur within the resource area on BLM administer lands include; meadow knapweed, spotted knapweed and English ivy. Several other Oregon State noxious weed listed species are known to occur in outside of Marys Peak Resource Area lands at lower elevations or to the east or west. These include; giant and Japanese knotweed, purple loosestrife, false brome, gorse, reed canary grass and several other knapweeds.

Several other non-native species are well established within the resource area as well. Common chickweed, teasle, annual bluegrass and knotweeds are some of the common non-native species that occur throughout the resource area. Austrian pine (*Pinus nigra*), a horticultural species, has become well established at Yaquina Head.

D. Wildlife

The MRA provides diverse conifer forest habitat for many wildlife species. The different forest stand age-classes provide the following wildlife habitat types within the resource area: early-seral habitat (0 to 39 years old) 29%; mid-seral habitat (40 to 79 years) 31%; late-seral habitat (80 to 199 years) 21%; old-growth habitat (200+ years) 11%; hardwood dominated habitat 7%; and non-forest habitats 1%. Special habitats such as wet and dry meadows, rock outcrops, cliffs, and grassy balds are part of the non-forest habitat type.

Many of these native forest and non-forest habitat types have been invaded, to some extent, by non-native plant species. NNP species impact wildlife by reducing foraging and nesting habitat, and modifying resting, hiding and escape habitat, thus changing the way a species interacts within the environment. The larger the patch of NNP habitat the greater the negative impact, especially on nesting and foraging behavior. Avoiding patches of NNP habitat requires more energy and increases the threat of predation.

E. Fisheries

The fishery values of the Marys Peak Resource Area are important for the diversity of populations and quality of spawning and rearing habitat. There are many regionally important fisheries. Most native stocks of salmonids are greatly reduced from historic levels due to habitat degradation, heavy fishing pressure (ocean and river), and ocean survival conditions. Due to their sport and commercial value, much more information exists for salmonid fishes (salmon, trout, char, and whitefish) than for other groups.

The Marys Peak Resource Area contains three populations of anadromous fish species that are listed as threatened. The listed fish are Oregon Coastal Coho Salmon (*Oncorhynchus kisutch*), Upper Willamette Chinook (*Oncorhynchus tshawytscha*), and Upper Willamette River Steelhead (*Oncorhynchus mykiss*). Other native fish species present include Cutthroat trout (*Oncorhynchus clarkii*) and Sculpin (*Cottus sp.*). In general habitat conditions on BLM managed land is in fair to good shape due to maintained buffers, even on land managed for timber production.

F. Recreation

The MRA has a range of recreational uses spreading from the Willamette Valley to the Pacific Ocean. Use of the area has been increasing each year. Some of the main recreational uses within the MRA are fishing, hunting, hiking, picnicking, swimming, camping, and scenic driving. Rock quarries on BLM lands are often used for target shooting.

The MRA manages five recreation areas. They are Alsea Falls campground and picnic areas, Missouri Bend, Mill Creek and Yaquina Head Outstanding Natural Area (YHONA). Non native vegetation has become established in all recreation areas within the MPRA. The establishment of the non native vegetation is slowly replacing and/or out competing native vegetation. Hiking trails are more difficult and costly to maintain with heavy infestations of non native vegetation. Invasive non-native plants also distract from the scenic quality. A large expanse of NNPs instead of native vegetation within MPRA can alter aesthetic values while recreating.

The MRA manages one campground, Alsea Falls. It has a maintenance building, paved main roadways, individual camping areas and bathrooms. Alsea Falls picnic area is located adjacent to Alsea Falls campground. It has a paved parking area, individual picnic areas and bathrooms. Both Alsea Falls campground and picnic areas are closed during the fall and winter. Small infestations of NNP are common in both areas.

Missouri Bend recreation area consists of a parking lot and bathroom. It is a picnic area and the area is opened year around. It is used frequently by fishermen as the area has a boat launch which accesses the Alsea River. Small infestations of NNP are common near the boat launch and bathrooms.

Mill Creek recreation area is maintained by Polk County. It has individual picnic areas and a bathroom. Small infestations of NNP occur in within the recreation area.

In October 2002 congressionally designated, Yaquina Head Outstanding Natural Area became apart of the National Landscape Conservation System (NLCS). NLCS was created in 2000 with a mission to conserve, protect, and restore nationally significant BLM landscapes that have outstanding natural, cultural, ecological, and scientific values for the benefit of current and future generations.

The 100-acre site has rich cultural, historical and natural diversity. Visitors come for a chance to view into the past and watch wildlife. Yaquina lighthouse is the tallest on the Oregon Coast at 93 feet and second oldest continually active lighthouse that has illuminated this promontory since 1873. Light Keepers lived here until 1966.

Quarry Cove Tidepools at YHONA were the world's first man made intertidal system that works as a natural system and is fully accessible.

A series of trails run throughout the area. Some of these trails are paved (concrete or asphalt) and others are either gravel or natural surfaced. One trail runs the length of the headland, connecting Quarry Cove with the lighthouse. Other trails take visitors to the top of Salal Hill or Communications Hill for a variety of views and hiking experiences.

Non-native plants have replaced natural occurring vegetation in many places especially along trails, roadways and parking lots.

G. Fuels

Non-native plants occur in all of the representative fuel types in the Marys Peak Resource Area. The areas to be treated under this proposed action are primarily in developed sites and / or near structures or other improvements. As such the fuel types have generally been modified or altered by these developments and ongoing use. At YHONA the fuel types are generally brush and scattered shore pine interspersed with roads, paths, structures and other improvements. Surrounding fuels are grass meadows, brush fields and patches of shore pine, hemlock and Douglas fir mostly under 50 yrs old. At Alsea Falls Rec site the fuels are primarily 30-50 yr old Douglas fir forest with light surface fuel loading interspersed with roads, paths, structures and other improvements. Surrounding fuels are a similar forest and brush types with heavier surface fuel loading.

Existing fuel loading varies with the fuel type. Grass and brush areas have total fuel loading in the 0-6 tons per acre nearly all of it fine fuel (<.25" dia.). The mixed timber / brush / grass areas have fuel loading in the 2 – 12 tons per acre range, generally most of the fuel is < 3" in diameter.

Air quality is generally very high at YHONA as well as most areas in the Marys Peak RA. This is due to good air circulation and distance from point source pollution. Accumulations of locally generated particulate air pollution generally only occur during periods of air stagnation which are short lived along the coast (less than 1 day) and may last several days in interior valleys within the coast range.

IV - ENVIRONMENTAL CONSEQUENCES

Chapter 4.0 summarizes the changes that can be expected as a result of implementing the alternatives. The environmental effects (changes from present base line condition) that are described in this chapter cover the following resource categories: soils, hydrology, vegetation, wildlife, fisheries and recreation. For those resources or values which review is required by statute, regulation, Executive Order, or policy, Appendix 1 contains the appropriate documentation as to the effects of the project on those resources or values.

A complete listing of the consequences can be found in the EIS, Vegetation Treatment on BLM Lands for Thirteen Western States, 1991 (VEIS). No impacts have been identified which exceed those addressed in this EIS. For a full discussion of the physical, biological, and social resources of the Salem District, refer to *RMP/FEIS*. The discussion in this document is site-specific¹ and supplements the discussion in the *RMP/FEIS* and the *VEIS*. Resource values are not identified in this section when there are no site-specific impacts, site specific impacts are considered

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negligible, or the cumulative impacts described in chapters 3 and 4 of the *RMP/FEIS* are considered adequate.

A. Soils

1. Alternative A (Proposed action)

Hand pulling of NNP's would cause minimal, short-term disturbance of soil. There would be some obvious disturbance and mixing of top soil in the immediate area where a plant root system is pulled. Most if not all soil would remain in close proximity to the area and no significant amount of soil is expected to be lost from the site. The same would be true if mechanical equipment is used to pull NNP's. Soil disturbance and compaction impacts from mechanical pulling of NNP's using a small back hoe would be comparable to that described below for mechanical mowing.

Mechanical mowing would cause less soil displacement or disturbance than hand pulling but some light compaction and disturbance could occur where mowing equipment is driven off road. Machinery will operate on top of the brush or slash. The mowing equipment will be mounted on a boom so equipment impacts from tires or tracks will be approximately 15- 25 feet apart and generally involve a single or double pass over a given area. Effects from these types impacts should not produce any measurable reduction in site productivity. Water infiltration rates should remain very close to what they are at present since no moderate or severe compaction is expected. Most of the ground surface (>80%) will retain a layer of organic material which is important in maintaining ability of soil to allow water infiltration.

Hand cutting of NNP's would produce little or no soil disturbance, displacement or compaction.

Where hand cut or mechanically pulled NNP's are piled and burned there will be loss of some or all of the organic surface litter and duff in the area where the material was piled and burned. These areas are typically 30 – 100 ft² in size. Past experience with these impacts has shown that the areas recover quickly and no surface erosion occurs. If any areas are broadcast burned, the burn duration time would be very short since the fuel loading is so light. Any broadcast burning on these sites may result in a minor reduction of the surface litter but no measurable decrease in water infiltration rates or increases in surface soil erosion rates are expected.

2. Alternative B (no-action)

Under the no action alternative, no control measures of non-native species would be implemented. Any potential affects associated with treatments described above would not occur. NNP species would continue to spread throughout the resource area, potentially displacing native species important for soil stabilization and soil health.

B. Hydrology

1. Alternative A (Proposed Action)

Measurable effects to watershed hydrology, channel morphology, and water quality as a result of the proposed action are unlikely. This action is unlikely to alter the current condition of the

aquatic system either by affecting its physical integrity, water quality, sediment regime, or in-stream flows. The proposed treatments would be site-specific, limited in scope & duration, and implement BMPs to minimize disturbance.

This proposal is unlikely to substantially alter stream flow or peak flow events. Any soil disturbance which may occur during the mechanical removal of non-native species and/or planting of native species would be localized and surrounded by undisturbed vegetation and duff which could filter any loose sediment before it could reach streams. Additionally, the small volume of vegetation targeted is not likely to significantly alter riparian microclimate or streamside shading.

Burning may produce patches of soil with altered surface properties that restrict infiltration. However, these surfaces would be surrounded by larger areas that would easily absorb any runoff or sediment that reach them. Broadcast burning would not occur within 100 feet of streams or open water bodies. A 50 foot minimum buffer would be required for individual burning of scattered piles of non native vegetation.

In conclusion, this proposal is unlikely to impede and/or prevent attainment of the stream flow and basin hydrology, channel function, or water quality objectives of the Aquatic Conservation Strategy (ACS). Because any effects of the proposed action are likely to be immeasurable, when combined with other actions taking place or proposed within the resource area, they are unlikely to contribute to cumulative effects on resource area hydrology.

2. Alternative B (No Action)

Under the no action alternative, no control measures of non-native species would be implemented. Any potential affects associated with treatments described above would not occur. NNP species would continue to spread throughout the resource area, potentially displacing native species important for riparian area and stream health.

C. Vegetation

1. Alternative A (Proposed Action)

a. Forest vegetation

Native vegetation would be allowed to re-vegetate areas in which NNPs have been treated or removed. Post treatments, native plant species may be sown or planted within the treatment areas. This may accelerate the amount of time it takes to re-vegetate the site with native plant species and slow the re-establishment of NNPs. The indirect and cumulative effects of this action would be that over time native habitats would be restored. This action is a landscape level management approach to managing NNP species by using the most effective control or eradication treatment while minimizing detrimental effects to the environment.

During treatments some native vegetation adjacent to the targeted NNPs may be removed, cut, chopped, or otherwise severed or damaged depending on control method used.

Some soil disturbance may be included in the use of physical treatments. The areas of displaced soil could allow for additional germination of species that had "seed banking" in the area or the area could become infested with other NNPs. All treated sites would be monitored and most

treatments would be a several year treatment. Monitoring would provide the means to keep any adverse affects from any additional infestations of NNP within the project area "low".

b. T&E, Special Status, and Special Attention Plant, Lichen, Fungus and Bryophyte Species

Special status and special attention species should not be affected through the use of treatments. Generally special status and special attention vascular plant, bryophyte, lichen or fungi species do not occur in areas where native vegetation has been displaced by NNPs.

c. Non Native Plant Species

These species would be targeted for removal. Removal would include any means from the list of treatments contained in Appendix D. Mortality or severe injury of plants, eradication, reduction or control of populations, and reduction and/or prevention of seed production would be the direct effect to targeted NNPs from all treatment methods. NNP species would be pulled, severed or otherwise removed and the carcuses destroyed, hauled off site or left on site to decay or would be burned.

2. Alternative B (no action alternative)

Under this alternative, no attempt would be made to control the infestation of NNPs located throughout the MRA. Non native plants would continue to infest new locations and existing infestations would continue to increase in size, while displacing native vascular plant, lichen, bryophyte and fungal species. Natural vegetation in riparian reserves, general forest matrix, late successional reserves, adaptive management areas and special areas (ACEC's, scenic byways, recreation areas etc.) could become infested with NNP species. If NNP sites are not controlled in any manner, they often displace acres of native vegetation. These infestations can alter large areas, creating a less diverse ecosystem and often creating a monoculture of non desirable vegetation.

D. Wildlife

1. Alternative A (Proposed Action)

There would be no effect to wildlife species with the implementation of the proposed action. Short term impacts would not be significant to wildlife populations because the acreages to be treated are small and the areas would not be concentrated in any one watershed during the same year. Over the long term, the effects of non-native plant control would be beneficial because they would help restore degraded habitats and plant communities and prevent additional areas from being degraded due to further invasions. Controlling non-native plants and encouraging native plant growth would provide higher quality habitat for many wildlife species, as well as ensure future productivity and use of the land for wildlife.

The noise disturbance associated with mechanical removal could disturb sensitive breeding sites for spotted owls, bald eagles, and marbled murrelets. Seasonal restrictions would be used near known sites or unsurveyed suitable habitat. The use of any of the listed control treatments are not expected to negatively affect native wildlife habitat or the species it

supports. The use of biological controls is not expected to disrupt native insect populations. All introduced insect species are tested for host-specificity and competition with native species.

2. Alternative B (No action)

A continuous spread of non-native plants would have different short and long-term impacts on native wildlife species. In the short-term, direct, indirect and cumulative effects on these species would be negative but most likely negligible. Over the long-term, species dependent on native herbaceous vegetation will be directly impacted by reductions in foraging and nesting habitat throughout the resource area.

E. Fisheries

1. Alternative A (proposed action)

The mechanical removal of scattered noxious weeds would have no effect on fish or fish habitat. Design features to limit soil disturbance close to stream banks would keep impacts to the aquatic environment to a minimal level.

No broadcast burning of non-native plants would be permitted within 100 feet of any surface water. A 50 foot minimum buffer would be required for individual burning of scattered piles of non native vegetation.

Establishing a functioning native riparian plant community within the riparian reserves would benefit future aquatic habitat conditions by allowing trees to grow in areas that may be occupied by noxious weeds. Trees within the riparian area shade streams for cooler water temperature and provide the potential for LWD recruitment.

Consultation

This entire project would have no effect on listed fish or fish habitat, due to limited affect on riparian resources, design features and scattered nature of this project.

2. Alternative B: (no action)

Under this alternative, NNPs would not be managed. Non native plant species would continue to dominate some riparian areas and provide a source for future infestations.

F. Recreation

1. Alternative A (Proposed Action)

The recreating public could be inconvenienced by temporary closures of recreational facilities during and following treatments. Elimination and control of non-native plants and promotion of native vegetation should serve to maintain a high quality experience for recreating visitors. It would also reduce weed spread to other recreation sites.

Scenic quality would not be reduced or altered unless large acreages were burned or where total plant mortality occurred. These visual impacts would be short in duration (one or two years)

while the site is restored with native vegetation. Where individual plants or small groups of plants are treated, the effect would most likely not be noticeable to the casual public land user.

2. Alternative B (No Action)

Under this alternative, NNPs would not be managed. Increased infestations of non native plants would become a later issue as they could close trails and degrade permanent structures within recreation areas. Scenic quality could become degraded as infestation increase in size or new infestations become established.

G. FUELS AND AIR QUALITY

Alternative A (Proposed Action)

Mowing would reduce the NNP's to mulch and eliminate the need for burning to dispose of excess material in most circumstances. There would be very little fire risk associated with the mowed areas since the fuel loading would be very low and the arrangement and depth of the fuel bed would promote very low flame lengths, minimal spotting distance and low resistance to control. The close proximity of the fuels to the ground will promote rapid decomposition.

In most cases, NNP's pulled or cut will be piled and burned, or broadcast burned, or a combination of both. (There may be areas where piles or concentrations of NNP's would be hauled away and shredded or mulched). There will be a slight increase in risk of a fire start when NNP's are piled. The fuels will be arranged in a discontinuous arrangement surrounded by areas devoid of fuel concentrations. When ignited, flame lengths will be 2-8 feet and small fire brands that can travel moderate distances (~100') will be created. With dry fuels, burn duration (flaming stage) will be less than 20 minutes with nearly complete consumption of piles within 3 hours. Since the total amount of fuel is low (<6 tons) the amount of smoke generated will be small and should dissipate rapidly. Any broadcast burning will produce 1-4 foot flame lengths with burn duration less than 1 hour. Smoke would be light and dissipate rapidly.

H. Consultation

ESA Consultation: Project as designed is considered a no effect to terrestrial wildlife. Pursuant to Section 7 of the Endangered Species Act, these projects are covered from the United States Fish and Wildlife Service under the current Programmatic Disturbance Only Biological Opinion. There will be no effect to the suitable habitat of any listed species. The project would have no effect on listed fish species. The project is covered under the Endangered Species Act Section 7 Formal consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for U.S. Forest Service and Bureau of Land Management Programmatic Activities in Northwestern Oregon (February 25, 2003).

APPENDIX A: INTERDISCIPLINARY TEAM MEMBERS

Resource	Name	Initial	Date
Botany/team lead	Ron Exeter	R.E.	June 30, 2003
Soils/Fuels/Air quality	Tom Tomczyk	T.T.	6/5/03
Hydrology/Water Quality	Ashley La Forge	a.l.	6/3/03
Wildlife	Gary Licata	gal	6/9/03
Riparian	Amy Haynes	ah	6/11/03
Fisheries	Steve Liebhardt	SL	6/11/03
Recreation/Visual Resource Rural Interface/Wild and Scenic Rivers	Traci Meredith	TMM	6/11/03
NEPA Coordinator	Carolyn Sands	CS	6/30/03
Ecology	Hugh Snook	HS	6/11/03
Cultural	Tom Vanderhoof	TMV	6/11/03

APPENDIX B: ENVIRONMENTAL ELEMENTS

This table summarizes Environmental Elements that have been considered in developing the Alternatives, and identifies elements affected by the project and where the effects are described in the text.

Environmental Element		Effect		Section Addressed In Text or Comments
		Yes	No	
* Air Quality		X		Air quality impacts would be of short duration during burning. Burning would temporarily reduce air quality until the gases and particulates that make up smoke are dissipated.
* Areas of Critical Environmental Concern		X		Any management of non-native weeds would be in conformance with individual ACEC management plans.
* Cultural, Historic, Paleontological Resources			X	Cultural resource inventories of the affected area would precede management actions that could damage cultural resources or impact culturally significant sites.
* Environmental Justice			X	N/A, No Effect
* Prime or Unique Farm Lands			X	N/A, No Effect
* Flood Plain		X		Treatment of non-native species along rivers would be beneficial to floodplain native vegetation.
* Native American Religious Concerns			X	N/A, No Effect
* Threatened or Endangered Species	Plants	X		All project areas would be inventoried prior to any treatment.
	Animals	X		All project areas would be inventoried prior to any treatment.
Special Status Plant Species			X	All special status plant species would be protected.
Special Status Animal Species			X	Mitigation of projects near any special status species would be implemented, providing for a no effect determination.
* Hazardous / Solid Waste			X	No hazardous waste sites have been identified on the Marys Peak Resource Area.
* Water Quality (Surface and Ground)			X	Not affected.
Fisheries Resources			X	Not affected.
* Wetlands / Riparian Zones		X		Some wetlands and riparian area would be treated. Treatment should increase the values in the area in the long term.
* Wild and Scenic Rivers			X	N/A, No Effect
* Wilderness		X		Any treatments in wilderness areas would be beneficial.
* Non-native species		X		Non native species would be the target for removal under this EA.
Adjacent Land Uses		X		Any treatments on adjacent land areas would be beneficial.
Mineral Resources			X	N/A, No Effect
Recreation/Visual Resources		X		Any treatments in recreation areas or within visual resources would be beneficial.

Environmental Element	Effect		Section Addressed In Text or Comments
	Yes	No	
Socioeconomic Resources	X		This project would have little affect on socioeconomic resources. Some blackberry patches may be destroyed.
Soil Resources	X		Very minor or no displacement or compaction of soil. No increase in erosion rate expected. No reduction of site productivity.
Vegetation Resources	X		In general, all treatments would be beneficial to native vegetation.
Wildlife Resources	X		In general, all treatments would be beneficial to native wildlife species.
Fuels Management	X		Minor increase in dead fuel loading mitigated thru burning. Minor, short term (1-3 hr.) impact on air quality in the immediate area (<1/4 mile).

* Environmental features which the Bureau of Land Management is required by law or policy to consider in all Environmental Documentation (BLM Handbook H-1790-1, Appendix 5: Critical Elements of the Human Environment).

Downstream Beneficial Uses Review Summary (Salem FEIS 3-9)		
Downstream Beneficial Uses	Affected/ Not Affected/ N/A (not present within the project area)	Remarks /References
Public Water Supply	Not Affected	p. 12-13
Private Domestic Water Supply	Not Affected	p. 12-13
Irrigation	Not Affected	p. 12-13
Fisheries	Not Affected	p. 15
Wildlife	Not Affected	p. 14-15
Recreation	Not Affected	p.15-16
Maintenance of Aesthetic Quality	Affected	Removal of non native species can improve the aesthetic quality.

APPENDIX C: AQUATIC CONSERVATION STRATEGY OBJECTIVES

The Salem District Record of Decision and Resource Management Plan (RMP, Sept 1995), calls for the attainment of the Aquatic Conservation Strategy (ACS) objectives. Each objective and the relationship to the proposed action are discussed below. This section will address the effects of implementing the alternatives, described in this document, in relation to each of the ACS Objectives. Forest Service and BLM-administered lands within the range of the spotted owl will be managed to:

Objective 1: Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

Project Discussion: The removal and/or control of non-native plant species under Alternative A would help ensure that the lands are managed in compliance with the ACS objectives. The riparian and wetland habitat on the lands would be protected from non-native species, which would encourage a diversity of native species. This would contribute toward maintaining the complexity of aquatic systems.

Objective 2: Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

Project Discussion: The integrated weed management program as outlined in Alternative A would begin to restore some of the wetlands, floodplains and uplands. Species such as Japanese knotweed can quickly take over riparian sites and crowd out native species destroying any connecting habitats. By controlling species, connecting habitats are restored and managed under ACS objectives.

Objective 3: Maintain and restore physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

Project Discussion: Most non-native species are not known for their soil stabilizing ability nor do they provide the habitat needed for floodplains. Native species that have adapted over the years to the streams and river ecology would most likely provide greater protection to the shoreline and banks. This non-native plant management plan would restore native species that historically occurred within riparian systems that are currently occupied by non-native plant species. The restoration of such species would improve the physical integrity of the aquatic system.

Objective 4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and that benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Project Discussion: As discussed above, the integrated non-native species management plan would increase the amount of native riparian and wetland habitats managed for ACS objectives and contribute toward meeting this objective especially with restoration efforts on the disturbed lands.

Objective 5: Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of sediment regime include timing, volume, rate, and character of sediment input, storage and transport.

Project Discussion: Changes in the sediment regime could occur if non-native species were allowed to become the dominant species. By controlling or eradicating non-native species, native species, are more likely to maintain and restore the sediment regime, because they have adapted to high and low water flows.

Objective 6: Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

Project Discussion: An integrated non-native species management program would work to maintain and restore natural in-stream flows by providing native vegetation along riparian areas, which have adapted to high and low flow regimes.

Objective 7: Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

Project Discussion: Floodplains and meadows which have non-native weed species should be prioritized for management action. Inundation of these habitats could assist in propagation of non-native species downstream. The proposed management action should help maintain and restore this objective.

Objective 8: Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

Project Discussion: Integrated non-native species management will help restore diversity of plant communities by allowing native species to repopulate sites. Native species are adapted to the conditions and ecological processes in riparian areas and wetlands.

Objective 9: Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Project Discussion: Non-native weed species tend to create monocultures and crowd out native species. Using an integrated management approach and eradicating populations of non-native plant species can accomplish an effective and successful restoration effort.

APPENDIX D: TREATMENT DESCRIPTIONS

This list is taken from the Partners Against Weeds – An action plan for the Bureau of Land Management (1996), Appendix 5 and the Noxious Weed Strategy for Oregon/Washington (1994), Appendix 4.

Cultural

- Develop available preventive measures, such as quarantine and closure, to reduce the spread of the infestation.
- If past management activities have allowed the introduction and spread of non-native plants, determine how to change management after selecting a treatment method.
- Determine whether livestock or wildlife feeding programs can be managed to reduce weed infestations.
- Determine feasibility of changes in wildlife movement that would reduce or contain the infestation due to movement of seeds on or in the animals.
- Revegetate all bare soil following disturbance.
- Only allow weed-free equipment in an uninfested area: e. g., logging, mining, recreation.
- Limit, restrict, or modify recreational uses such as ORV's, bicycling, rafting, and hiking to reduce spreading weeds. In some cases, recreational sites may have to be quarantined.
- Determine if changes of season and type of recreational use are necessary to reduce or contain the spread of noxious weeds.
- Select plant species that would reduce the spread of noxious weeds.
- Defer soil disturbance if possible until weeds are controlled or under management.
- Develop rock source management plans.
- Keep utilization of rock source confined to existing contaminated roads.
- Keep new or "clean" rock stockpiles separate from contaminated stockpiles.
- Obtain rock from uncontaminated sources.
- Determine most feasible land use to reduce and prevent infestations.
- Determine whether or not specific public awareness programs could reduce the infestation or control the spread of weeds.
- Determine if exclusion of various uses is a possibility and if it would reduce weed spread.

Physical Control

- Determine whether or not hoeing or “grubbing” would reduce (or increase) the infestation.
- Determine if hand pulling the weeds reduces the seed source.
- Evaluate terrain to allow for mowing and determine whether or not it is an acceptable option for control of the spread of seeds.
- Evaluate cultivation and other conventional farming practices options that could be utilized cost effectively.
- Determine whether or not policy and laws allow controlled burning and address regulations regarding smoke management.
- Determine whether or not the terrain and vegetative cover allow for a controlled burn program.
- Evaluate whether a controlled burning program will reduce the infestation without long-term deleterious effects upon desirable native vegetation.
- Monitor heavy recreational use sites seasonally for early detection of new weeds. Mark and hand-pull when found, especially before seed ripe.

Biological Control

- Determine whether or not there are naturally occurring agents within the ecosystem which can reduce the infestation.
- Determine which elements affect natural occurring control agents.
- Determine whether or not these elements can be modified to reduce the negative effect on these agents.
- Determine whether or not these elements can be enhanced to increase the effectiveness of these agents on the non-native infestation.
- Determine whether or not biological control agents can be introduced into the ecosystem and survive to reduce the amount of infestation.
- Determine which introduced biological agents provide an acceptable control method for this infestation.
- Evaluate if the biological control agent has been tested for adverse affects against all nontarget species within the treatment area.
- Determine whether or not policy and laws allow for the introduction of biological control agents.

- Determine whether policy and laws allow for introduction and grazing of livestock as a biological control measure.

Biological control, including the use of domestic animals, is a proven method of successfully controlling some species of non-native weeds. The introduction of weed selective insects, known as classical biocontrol, has provided economical and sustainable control of St. Johnswort, tansy ragwort, and mush thistle in a majority of infested areas. Sheep and goats have controlled leafy spurge in several Wilderness Management Areas. Insects released against leafy spurge within the last 8 years are significantly reducing weed populations in several locations; the most promising insects have not been redistributed to thousands of locations.

Although biocontrol research is continuing on insects and plant pathogens for leafy spurge, knapweeds, and a few other weeds, the overall effort is severely limited in scope.

Thus, the promise of biocontrol should never be used as an excuse to postpone other Integrated weed management activities for prevention, containment, or control of NNP. Classical biological control is not appropriate for small spot infestations, for sites where rapid control is desired, or where other management practices are preferred for weed control of might be damaging to the agents.

Appendix E. Oregon State Noxious Weed List

RATING	COMMON NAME	FAMILY	SCIENTIFIC NAME
B	Velvetleaf	Malvaceae	<i>Abutilon theophrasti</i>
B	Biddy-Biddy	Zygophyllaceae	<i>Acaena novae-zelandiae</i>
B	Russian knapweed	Asteraceae	<i>Acroptilon repens</i>
B	Jointed goatgrass	Poaceae	<i>Aegilops cylindrica</i>
A	Ovate goatgrass	Poaceae	<i>Aegilops ovata</i>
A	Barbed goatgrass	Poaceae	<i>Aegilops triuncialis</i>
B	Quackgrass	Poaceae	<i>Agropyron repens</i>
A	Camelthorn	Fabaceae	<i>Alhagi pseudalhagi</i>
B	Ragweed	Asteraceae	<i>Ambrosia artemisiifolia</i>
A	Skeletonleaf bursage	Asteraceae	<i>Ambrosia tomentosa</i>
B	Common bugloss	Boraginaceae	<i>Anchusa officinalis</i>
B	False brome	Poaceae	<i>Brachypodium sylvaticum</i>
B	Lens podded white top	Brassicaceae	<i>Cardaria chalapensis</i>
B	White top (Hoary cress)	Brassicaceae	<i>Cardaria draba</i>
B	Hairy white top	Brassicaceae	<i>Cardaria pubescens</i>
B	Musk thistle	Asteraceae	<i>Carduus nutans</i>
A	Plumeless thistle	Asteraceae	<i>Carduus alanthoides</i>
B	Italian thistle	Asteraceae	<i>Carduus phycnocephalus</i>
B	Slender flowered thistle	Asteraceae	<i>Carduus tenuiflorus</i>
A	Smooth distaff thistle	Asteraceae	<i>Carthamus baeticus</i>
A, T	Woolly distaff thistle	Asteraceae	<i>Carthamus lanatus</i>
A, T	Purple starthistle	Asteraceae	<i>Centaurea calcitrapa</i>
B	Diffuse knapweed	Asteraceae	<i>Centaurea diffusa</i>
A, T	Iberian starthistle	Asteraceae	<i>Centaurea iberica</i>
B, T	Spotted knapweed	Asteraceae	<i>Centaurea maculosa</i>
B	Short fringed knapweed	Asteraceae	<i>Centaurea nigrescens</i>
B	Meadow knapweed	Asteraceae	<i>Centaurea pratensis</i>
B, T	Yellow starthistle	Asteraceae	<i>Centaurea solstitialis</i>
A, T	Squarrose knapweed	Asteraceae	<i>Centaurea virgata</i>
B, T	Rush skeletonweed	Asteraceae	<i>Chondrilla juncea</i>
A	Western waterhemlock	Umbelliferae	<i>Circuta douglasii</i>
B	Canada thistle	Asteraceae	<i>Cirsium arvense</i>
B	Bull thistle	Asteraceae	<i>Cirsium vulgare</i>
B	Old man's beard	Ranunculaceae	<i>Clematis vitalba</i>
B	Poison hemlock	Apiaceae	<i>Conium maculatum</i>
B	Field bindweed	Convolvulaceae	<i>Convolvulus arvensis</i>
B	Common Crupina	Asteraceae	<i>Crupina vulgaris</i>
B	Houndstongue	Boraginaceae	<i>Cynoglossum officinale</i>
B	Yellow nutsedge	Cyperaceae	<i>Cyperus esulentus</i>
A	Purple nutsedge	Cyperaceae	<i>Cyperus rotundus</i>
B	French broom	Fabaceae	<i>Cytisus monspessulanus</i>
B	Scotch broom	Fabaceae	<i>Cytisus scoparius</i>
B, T	Portuguese broom	Fabaceae	<i>Cytisus striatus</i>
B	Cutleaf teasel	Dipsacaceae	<i>Dipsacus laciniatus</i>
B	South American waterweed(Elodea)	Hydrocharitaceae	<i>Elodea (=egeria) densa</i>
B	Giant horsetail	Equietaceae	<i>Equisetum telmateia</i>






B, T	Leafy spurge	Euphorbiaceae	<i>Euphorbia esula</i>
B	Halogeton	Chenopodiaceae	<i>Halogeton glomeratus</i>
B	English ivy	Araliaceae	<i>Hedera helix</i>
A	Texas blueweed	Asteraceae	<i>Helianthus ciliaris</i>
B	Spikeweed	Asteraceae	<i>Hemizonia pungens</i>
A, T	Giant hogweed	Apiaceae	<i>Heracleum mantegazzianum</i>
A	Orange hawkweed	Asteraceae	<i>Hieracium aurantiacum</i>
A, T	Yellow hawkweed	Scrophulariaceae	<i>Hieracium floribundum</i>
A	Mouse ear hawkweed	Asteraceae	<i>Hieracium pilosella</i>
A	King devil hawkweed	Asteraceae	<i>Hieracium piloselloides</i>
A	Meadow knapweed	Asteraceae	<i>Hieracium pratense</i>
A	Hydrilla	Hydrocharitaceae	<i>Hydrilla verticillata</i>
B	St. Johnswort (Klamath weed)	Hypericaceae	<i>Hypericum perforatum</i>
B	Dyers woad	Brassicaceae	<i>Isatis tinctoria</i>
B	Kochia	Chenopodiaceae	<i>Kochia scoparia</i>
B	Perennial pepperweed	Brassicaceae	<i>Lepidium latifolium</i>
B	Dalmatian toadflax	Scrophulariaceae	<i>Linaria dalmatica</i>
B	Yellow toadflax	Scrophulariaceae	<i>Linaria vulgaris</i>
B, T	Purple loosestrife	Lythraceae	<i>Lythrum salicaria</i>
B	Eurasian watermilfoil	Haloragaceae	<i>Myriophyllum spicatum</i>
A	Matgrass	Poaceae	<i>Nardus stricta</i>
B	Scotch thistle	Asteraceae	<i>Onopordum acanthium</i>
B	Small broomrape	Orobanchaceae	<i>Orobanche minor</i>
B	Wild proso millet	Poaceae	<i>Panicum miliaceum</i>
A	African rue	Caltrop	<i>Peganum harmala</i>
B	Japanese knotweed	Polygonaceae	<i>Polygonum cuspidatum</i>
B	Himalayan knotweed	Polygonaceae	<i>Polygonum polystachyum</i>
B	Giant knotweed	Polygonaceae	<i>Polygonum sachalinense</i>
B	Sulfur cinquefoil	Rosaceae	<i>Potentilla recta</i>
A, T	Kudzu	Fabaceae	<i>Pueraria lobata</i>
B	Creeping yellow cress	Brassicaceae	<i>Rorippa sylvestris</i>
B	Himalayan blackberry	Rosaceae	<i>Rubus discolor(prcerus)</i>
B	Mediterranean sage	Lamiaceae	<i>Salvia aethiopis</i>
B, T	Tansy ragwort	Asteraceae	<i>Senecio jacobaea</i>
B	Milk thistle	Asteraceae	<i>Silyburn marianum</i>
A	Silverleaf nightshade	Solanaceae	<i>Solanum elaeagnifolium</i>
B	Buffaloburr	Solanaceae	<i>Solanum rostratum</i>
B	Johnsongrass	Poaceae	<i>Sorghum halepense</i>
A, T	Common cordgrass	Poaceae	<i>Spartina alterniflora</i>
A, T	Smooth cordgrass	Poaceae	<i>Spartina anglica</i>
A, T	Dense-flowered cordgrass	Poaceae	<i>Spartina densiflora</i>
B, T	Saltmeadow cordgrass	Poaceae	<i>Spartina patens</i>
B	Spanish broom	Leguminosae	<i>Spartium junceum</i>
B	Austrian pea weed	Fabaceae	<i>Sphaerophysa salsula</i>
B	Dodder	Cuscutaceae	<i>Suscuta spp.</i>
B	Medusahead rye	Poaceae	<i>Taeniatherum canput-medusae</i>
B	Saltcedar	Tamaricaceae	<i>Tamarix ramosissima</i>
B	Puncturevine	Zygophyllaceae	<i>Tribulus terrestris</i>
A	Coltsfoot	Asteraceae	<i>Tussilago farara</i>
B, T	Gorse	Fabaceae	<i>Ulex europaeus</i>

B Spiny cocklebur
A Syrian bean caper

Asteraceae
Zygophyllaceae

Xanthium spinosum
Zygophyllum fabago

APPENDIX F: Location Map

-  BLM administered lands inside Marys Peak RA
-  Marys Peak RA
-  County Boundaries
-  Major Highways
-  Major Cities

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data was compiled from multiple source data and may not meet U.S. National Mapping Accuracy Standard of the Office of Management and Budget.

